

REMARKS

Amendments

Amendments to the Claims

Applicant has amended the claims to more particularly point out what Applicant regards as the invention. In particular, Applicant has clarified the operation of the first and second motion estimation phases using subject matter claimed in dependent claims 3, 7 and 16, which have been cancelled. No new matter has been added as a result of these amendments; support may be found in the Specification, *intra alia*, at paragraphs 45-54 that describe Figure 1.

Objections

Objections to the Claims

The Examiner objected to claim 13 as containing informalities. Applicant has corrected the erroneous dependency that introduced the informality and respectfully requests the withdrawal of the objection. Applicant further respectfully submits that no new issues are raised by the corrections.

Rejections

Rejections under 35 U.S.C. § 103

Claims 1, 2, 5, 6, 8-11, 14, 15, 17 and 19

Claims 1, 2, 5, 6, 8-11, 14, 15, 17 and 19 stand rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent 6,058,140 to Smolenski and U.S. Patent 6,574,278 to McVeigh et al. McVeigh qualifies as prior art only under 35 U.S.C. § 102(e) because it issued after Applicant's filing date. Applicant does not admit that McVeigh is prior art and reserves the right to challenge it at a later date. Nonetheless, Applicant respectfully submits that the combination does not teach each and every element of the invention as claimed in claims 1, 2, 5, 6, 8-11, 14, 15, 17 and 19.

Smolenski discloses an encoder that uses an inverse 3:2 pulldown to detect redundant video fields using motion vectors for adjacent video fields. Smolenski is using

a first field and a second field of one frame, or the second field of one frame and the first field of the next frame, to determine the motion vectors (*see* Figure 2).

The background section of McVeigh mentions using motion vectors to detect scene changes in a video but does not disclose what fields in the video frames are used to determine the motion vectors.

It is common in the art to refer to the top (or bottom) fields of two different frames as having the same polarity, while a top field of one frame and a bottom field of the different frame are referred to as having opposite polarity. Furthermore, Applicant respectfully points out to the Examiner that the phrase "field motion vector" is a term of art used to refer to motion vectors based on fields of the same polarity. Applicant's definition of the term is consistent with its common usage in the art (*see* paragraph 45 of the Specification). The Examiner is required to use commonly accepted definitions in the art when interpreting claims [MPEP 2111.01 II].

Accordingly, Smolenski's motion vectors cannot be properly equated with Applicant's claimed field motion vectors because Smolenski's motion vectors are between fields of opposite polarity. Thus, Smolenski does not teach or suggest Applicant's claimed first motion estimation phase that determines field motion vectors. Because McVeigh does not disclose the fields used to determine the motion vectors, McVeigh cannot be properly interpreted as teaching or suggesting Applicant's claimed first motion estimation phase. In addition, neither Smolenski nor McVeigh teach or suggest that a 3:2 detection is executed if a scene change is not detected as Applicant claims.

Furthermore, the Examiner's reliance on Smolenski as disclosing the elements claimed in claims 9 and 10 is misplaced. The Examiner asserts that Smolenski's invention must use ratios of motion vector data to "sort out the repeated field from the non-repeated fields" even though Smolenski's disclosure does not teach or even suggest Applicant's claimed limitations of ratios or thresholds. Applicant respectfully reminds the Examiner that the principle of inherency requires the Examiner provide some rationale or evidence that the prior art necessarily includes the limitations at issue [MPEP 2112 IV]. Because the Examiner has not properly established that Smolenski's invention compares ratios of motion vectors to a threshold as claimed, the Examiner has failed to state a proper *prima facie* case of obviousness for claims 9 and 10.

Therefore, the combination of Smolenski and McVeigh cannot render obvious Applicant's invention as claimed in claims 1, 2, 5, 6, 8-11, 14, 15, 17 and 19, and Applicant respectfully requests the withdrawal of the rejection of the claims under 35 U.S.C. § 103(a) over the combination.

Claims 3, 4, 7, 16 and 18

Claims 3, 4, 7, 16 and 18 stand rejected under 35 U.S.C. § 103(a) over the combination of Smolenski and McVeigh in view of U.S. Patent 5,638,129 to Lee. Claims 3, 7 and 16 have been cancelled. Applicant respectfully submits that the combination does not teach or suggest each and every limitation in claims 4 and 18.

Lee discloses two different types of motion vector detectors, a feature point motion vector detector and an edge point motion vector detector. The Examiner has relied on Lee's edge point motion vector detector as disclosing Applicant's claimed second phase motion estimation. However, Lee does not teach or suggest that the edge point motion vector detector determines a set of motion vectors describing a relationship between fields of opposite polarity in the two frames and a relationship between the two frames as claimed in claims 1 and 15, from which claims 4 and 18 depend.

Therefore, the combination of Smolenski, McVeigh and Lee cannot render obvious Applicant's invention as claimed in claims 4 and 18, and Applicant respectfully requests the withdrawal of the rejection of the claims under 35 U.S.C. § 103(a) over the combination.

New Claim

New claim 20 has been added to claim Applicant's invention under 35 U.S.C. § 112 ¶ 6. Applicant respectfully submits claim 20 is allowable for at least the reasons set forth above for claims 1-2, 4-6, 8-15 and 17-19.

Allowable Subject Matter

Applicant thanks the Examiner for indicating that claims 12 and 13 contain allowable subject matter if rewritten to include all the limitations of the claims from which they each originally depended. Because Applicant believes all the pending claims are patentable, Applicant has not amended the claims as suggested at this time.

SUMMARY

Claims 1-2, 4-6, 8-15 and 17-19 are currently pending. In view of the foregoing amendments and remarks, Applicant respectfully submits that the pending claims are in condition for allowance. Applicant respectfully requests reconsideration of the application and allowance of the pending claims.

If the Examiner determines the prompt allowance of these claims could be facilitated by a telephone conference, the Examiner is invited to contact Sue Holloway at (408) 720-8300 x309.

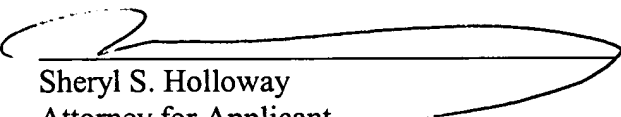
Deposit Account Authorization

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due. Furthermore, if an extension is required, then Applicant hereby requests such extension.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR
& ZAFMAN LLP

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Sheryl S. Holloway
Attorney for Applicant
Registration No. 37,850

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, CA 90025-1026
(408) 720-8300 x309